Claims

What is claimed is:

1. In a motor vehicle airbag system, having a module **(101)** with a plurality of igniters **(102,103)** for causing an airbag to inflate, a diagnostic monitor **(119)** that determines if a collision is occurring and initiates the igniters, and first and second pairs of wires **(111,112) and (115, 116)** extending between the module **(101)** and the monitor **(119)**, the improvement comprising:

a manually operable switch **(23)** having portions thereof connected to each of the first wires **(111,115)** of each said pair of wires for selectively providing continuity through the first wires between the monitor **(119)** and each of the igniters **(102,103)** while in an ON position and for selectively breaking continuity through the first wires between the monitor **(119)** and each of the igniters **(102,103)** while in an OFF position;

a single common resistor **(160)** connected to the second wire **(112,116)** of each said pair of wires **(111,112) and (115,116)** and connected to the switch **(23)**, so that while in the OFF position, the switch places said single, common resistor **(160)** in series circuit relatively between the first and second wires in each said pair of wires **(111,112)** and **115,116)**; and

wherein the common resistor **(160)** has an impedance similar to that of each igniter**(102,103)**, so as to provide a false indication to the monitor **(119)** that

electrically conductive continuity exists with each igniter **(102,103)** while the switch **(23)** is in the OFF position.

2. The airbag system according to claim 1, further comprising filter circuits **182, 152 and 144** so that inductively induced electromagnetic waves are removed when the airbag switch is in the ON position, by passing these waves through capacitors **180, 154 and 146,** respectively to ground **(181)**, rather than allowing unintentional alternating current electrical impulses to reach the airbag detonators **(102,103) and 191** and cause an unintended detonation.

3. The airbag system according to claim 1, further comprising an optical signal device **(25)** connected to the switch **(23)** to provide an optical signal while the switch **(23)** is in the OFF position.

4. The airbag system according to claim 1 wherein the switch **(23)** includes poles **(32,33)** connected to each of the first wires **(111,115)**, the poles **(32,33)** being movable in unison when the switch **(23)** moves between the ON and OFF positions.

5. The airbag system according to claim 1, further comprising:

a housing **(22)** adapted to be mounted within the motor vehicle, the switch **(23)** and the resistor **(160)** being located within the housing **(22)**, the switch **(23)** having a manual engagement portion located on an exterior of the housing **(22)** for engagement by a user.

6. The airbag system according to claim 1, further comprising:

a housing **(22)** adapted to be mounted within a motor vehicle, the switch

(23) and the resistor **(160)** being located within the housing **(22)**, the switch **(23)** having a manual engagement portion located on an exterior of the housing **(22)** for engagement by a user, and

an optical device **(25)** connected to the switch **(23)** for providing an optical signal while the switch **(23)** is in the OFF position, the optical signal device being mounted to the exterior of the housing **(22)**.

7. In a motor vehicle airbag system, having a module **(101)** with a plurality of igniters **(102,103)** for causing an airbag to inflate, a diagnostic monitor **(119)** that determines if a collision is occurring and initiates the igniters , and first and second sets of wires **(111,112)** and **(115,116)** extending between each of the igniters and the monitor for conveying signals between the module **(101)** and the monitor **(110)** , the improvement comprising:

a break **(121,122)** in the first wire **(111,115)** of each set of wires **(111,112)** and **(115, 116)** respectively, interrupting electrically conductive continuity between the monitor **(119)** and each of the igniters **(102)** and **(103)** respectively;

a housing **(22)** adapted to be mounted in a passenger compartment of the motor vehicle;

a first pair of leads **(135,138)** from the airbag switch **(23)** connected to each of the first wires **(111,115)** respectively, and a second pair of leads **(137,140)** from the airbag switch **(23)** connecting to the airbag igniters **(102,103)** each set of said first and second pairs of leads extending into the housing **(23)**;one, common resistor **(160)** mounted in the housing **(22)**;

a manually operable switch **(23)** mounted in the housing **(22)** and having

a manual engagement actuator **(24)** on an exterior of the housing **(22)**, the switch **(23)** having a pole **(32,33)** for each igniter **(102,103)** respectively, each of the pol s **(32,33)** being connected to one of the first wires **(111,115)** respectively, of each of the sets of wires **(111,112)** and **(115,116)**, each of the poles having an ON position that connects the first wires **(111,115)** in electrically conducting relationship between said monitor **(119)** and said ignitors **(102,103)** respectively, each of the poles **(32,33)** having an OFF position that breaks said electrically conducting relationship and connects said first wires **(111,115)** with the one comon resistor(160), the one common resistor **(160)** being electrically connected to the second wire **(112,116)** in each wire set so that while in an OFF position, the poles **(32,33)** place the resistor **(160)** in series between the first and second wires **(111,112)** and **(115,116)** of each set of wires, the resistor **(160)** having an impedance similar to that of each of the igniters **(102,103)** so as to avoid a fault signal by the monitor **(119)** while the switch **(23)** is in the OFF position.

8. The airbag system according to claim 7, wherein the switch **(23)** has at least three poles and is a double-throw.

9. A method of controlling airbag deployment of a motor vehicle airbag system having a module **(101)** with a plurality of igniters **(102,103)** for causing an airbag to inflate, a diagnostic monitor **(119)** that determines if a collision is occurring and initiates the igniters, first **(111,115)** and second **(112,116)** wires extending between each of the igniters **(102,103)** and the monitor **(119)** for conveying signals between the module **(101)** and the monitor **(119)**, the method comprising the steps of:

severing each of the first wires **(111,115)** between the igniters **(102,103)** and the

monitor **(119)**, creating a pair of ends **(138,135)** for each of the first wires **(111,115)**;

connecting a portion of a manually operable switch **(23)** to the ends **(135,138)** of each of the first wires **(111,115)**;

connecting one side of a resistor **(160)** to each of the second wires **(112,116)** and the other side to the switch **(23)**, the one resistor **(160)** having an impedance similar to each of the igniters **(102,103)**;

placing the switch in an ON position, providing electrically conductive continuity in the first wires **(111,115)** between the monitor **(119)** and each of the igniters **(102,103)**; then placing the switch in an off position, breaking continuity in the first wires **(111,115)** between the monitor **(119)** and each of the igniters **(102,103)** and simultaneously placing the common resistor **(160)** in series between the first and second wires **(111,112)** and **(115,116)** and the monitor **(119)**, the resistor **(160)** having an impedance similar to each of the igniters **(102,103)** so as to provide a false indication to the monitor **(119)** that electrically conductive continuity exists between the igniters **(102,103)** and the monitor **(119)** while the switch is in the OFF position.

10. The method as recited in claim 8, further comprising the steps of:

providing an illuminated signal while the switch **(23)** is in the OFF position.

11. The airbag system according to claim 1, further comprising:

Filter circuits **(152,182,145)** connected to each of said first wires **(111,115,117)** to reduce the possibility of unintentional detonation from inductive reactance created by electromagnetic waves, such as radio frequency waves or similar sources.